National Institute of Environmental Health Sciences

The climate's long-term impact on New Zealand infrastructure (CLINZI) project-A case study of Hamilton City, New Zealand

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Year: 2007
Journal: Journal of Environmental Management. 83 (4): 460-477

Abstract:

Infrastructure systems and services (ISS) are vulnerable to changes in climate. This paper reports on a study of the impact of gradual climate changes on ISS in Hamilton City, New Zealand. This study is also the first of its kind to be applied to New Zealand ISS. In the future, the CLINZI project will extend to other areas of New Zealand. Using historical climate data and four climate change scenarios, we modelled the impact of climate change on aspects of water supply and quality, transport, energy demand, public health and air quality. Our analysis reveals that many of Hamilton City's infrastructure systems demonstrated greater responsiveness to population changes than to gradual climate change. © 2006.

Source: http://dx.doi.org/10.1016/j.jenvman.2006.09.022

Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Air Pollution, Extreme Weather Event, Food/Water Quality, Food/Water Security, Meteorological Factors, Precipitation, Temperature, Unspecified Exposure

Air Pollution: Interaction with Temperature, Particulate Matter, Other Air Pollution

Air Pollution (other): CO; NOx

Extreme Weather Event: Drought, Flooding

Food/Water Quality: Other Water Quality Issue

Water Quality (other): Water temperature; Turbidity

Temperature: Extreme Cold, Extreme Heat, Fluctuations

Geographic Feature:

resource focuses on specific type of geography

Urban

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Australasia

Health Co-Benefit/Co–Harm (Adaption/Mitigation): ☒

specification of beneficial or harmful impacts to health resulting from efforts to reduce or cope with greenhouse gases

A focus of content

Health Impact: ☒

specification of health effect or disease related to climate change exposure

Cancer, Cardiovascular Effect, Dermatological Effect, Infectious Disease, Morbidity/Mortality, Respiratory Effect

Infectious Disease: General Infectious Disease, Vectorborne Disease

Vectorborne Disease: Mosquito-borne Disease

Mosquito-borne Disease: Dengue, Malaria

Mitigation/Adaptation: ☒

mitigation or adaptation strategy is a focus of resource

Adaptation

Resource Type: ☒

format or standard characteristic of resource

Research Article

Timescale: ☒

time period studied

Medium-Term (10-50 years)

Vulnerability/Impact Assessment: ☒

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content